# DAVID DOUGLAS' NEW SPECIES OF CONIFERS

Elbert L. Little, Jr.

A list of the new species of conifers collected by David Douglas in Northwestern America and California between the years 1824 and 1832 has been assembled from the original published sources. This compilation was made in connection with a study of Aylmer Bourke Lambert's "A Description of the Genus Pinus," which contained several of Douglas' discoveries. Previously, Suringar (4) had published most of these names in a list with some other species of Douglas. The recently published biography, "Douglas of the Fir," by Harvey (2), which contains much information hitherto unpublished, doubtless will arouse interest in his work. A summary of Douglas' discoveries of conifers, therefore, may be appropriate.

David Douglas (1798-1834) (1, 2, 3), a native of Scotland, was a botanical explorer for the Horticultural Society of London (now the Royal Horticultural Society). His first trip, in 1823, was to northeastern United States to obtain propagating material of cultivated fruits. The following year, on his next expedition he went by ship around the Horn to the northwestern coast of North America, then returned to England in 1827 by crossing Canada overland to Hudson Bay. He left England for the last time in 1829 on another ocean voyage to the Columbia River region. In 1831 and 1832 he collected in California. Then in the latter year he made a brief trip to Hawaii before returning to the Columbia River. He was killed in Hawaii in 1834 on his second journey there. Several important species of forest and ornamental trees are included among the many plants introduced by him to horticulture.

Douglas gave herbarium names to 12 species of conifers and collected specimens of 5 more which later were named as new by others. However, of these Douglas published before his death the descriptions of only 2 species of Pinus: Pinus lambertiana Dougl. (Linn. Soc. London Trans. 15: 500. 1827), the sugar pine, the largest pine in the world, and P. sabiniana Dougl. (Linn. Soc. London Trans. 16: 749. 1833).

Several of Douglas' discoveries were described in his manuscript, "Some American Pines," written evidently after he left England the last time and published eighty years after his death as an appendix of his journal (1, p. 338-348). After this journal was prepared for the press, two slightly different copies of this manuscript in Douglas' handwriting, containing

17 species of conifers (northern as well as western), with descriptive and geographic notes, were found. One species without author or citation, Pinus monticola, was described here by Douglas apparently as new. Six species then unpublished, P. douglasii, P. menziesii, P. nobilis, P. amabilis, P. ponderosa, and P. contorta, had brief Latin diagnoses followed by the incomplete citation "Sabine in Trans. Hort. Soc. Vol." However, Joseph Sabine, secretary of the Horticultural Society of London and Douglas' friend and patron, did not publish these new species in the Transactions (1, p. 338). The upheaval in the Society in 1830, followed by Sabine's resignation and in 1832 also by Douglas' resignation upon getting the news, and Douglas' absence from England together may account for the failure of these names to be published (2, p. 149-150, 190-192).

Five names of Douglas were published with descriptions by David Don in the third edition of Lambert's monographic work, "A Description of the Genus Pinus" (octavo, 2 v., illus. 1832) among the extra pages inserted as an appendix between pages 144 and 145 in most copies of volume 2. These names published "in order to secure to Mr. Douglas the credit of these interesting discoveries" were: Pinus sabiniana, P. monticola, P. nobilis, P. grandis, and P. menziesii. Here appeared also P. douglasii Sabine as a new name for P. taxifolia Lamb., the valuable timber tree introduced to horticulture by Douglas and appropriately given the English common name Douglas-fir from the specific epithet.

Two nomina nuda of Douglas, Pinus amabilis and P. insignis, appeared in 1835 in a list of plants raised from seed he sent to the Horticultural Society of London, published in the report of the new secretary, George Bentham (Hort. Soc. London Trans., ser. 2, 1: 404. 1835). Douglas' names were merely mentioned, because the living plants were too young for description.

In the extracts from Douglas' journal and letters to his teacher, W. J. Hooker (3), published by the latter in 1836 as a sort of biography were Pinus venusta Dougl. (Comp. Bot. Mag. 2: 152. 1836), described from memory in a letter, and two nomina nuda, P. amabilis Dougl. (p. 93) and P. ponderosa (p. 111, 141).

Douglas' authorship of another very important lumber tree, ponderosa pine, was lost, though both the Latin and common names still retain Douglas' descriptive epithet for the heavy wood. As early as 1830 there was published almost as a nomen nudum, Pinus ponderosa Dougl. ex Loud. (Hort. Brit. 387. 1830). The name is cited P. ponderosa Laws. (Agr. Man. 354. 1836), though Lawson's nontechnical English description was based upon young trees without cones and was far inferior to Douglas' own tech-

nical description in his manuscript. The mere mention by Lawson that Douglas introduced the species is not sufficient to credit him as author of his epithet. Two years later a botanical description was published as P. ponderosa Dougl. ex Loud. (Arb. Frut. Brit. 4: 2292, fig. 2210-2211. 1838).

Loudon published in the same volume descriptions and illustrations of two additional species of pines named by Douglas: P. contorta Dougl. ex Loud. (Arb. Frut. Brit. 4: 2292, fig. 2210-2211. 1838) and P. insignis Dougl. ex Loud. (4: 2265, fig. 2170-2172. 1838). Here also was Picea amabilis Dougl. ex Loud. (4: 2342, fig. 2247-2248. 1838), based upon Pinus amabilis Dougl. The next year the name now in use, Abies amabilis (Dougl.) Forb. (Pinet. Woburn. 125, pl. 44. 1839) was published, perhaps irregular as a new combination, since Douglas' manuscript name, a nomen nudum, was cited but Loudon's description was not mentioned.

David Don published different names for two of Douglas' new coniferous species in an article describing five species of Pinus collected by Dr. Thomas Coulter in California (Linn. Soc. London Trans. 17: 439-444. 1836). As Dr. Coulter and Douglas both were in California in 1831 and 1832, they may have collected together or exchanged specimens. Pinus bracteata D. Don (Linn. Soc. London Trans. 17: 442. 1836) competes with P. venusta Dougl. (1836) for the bristlecone fir. Though exact priority has not been determined, Abies venusta (Dougl.) K. Koch generally is adopted by custom (Little, Amer. Jour. Bot. 31: 592. 1944). Pinus radiata D. Don (Linn. Soc. London Trans. 17: 442. 1836) has priority over P. insignis Dougl. (1838) for the Monterey pine. Douglas proposed no name for P. coulteri D. Don (Linn. Soc. London Trans. 17: 440. 1836), regarding it merely as a variety of his P. sabiniana when he sent specimens and seeds back to England.

Douglas' conifers and other collections from the Northwest were cited in 1839 in the "Flora Boreali-Americana" by W. J. Hooker (2: 161-167), who received a set of specimens from his former student. Here were published two more new species based upon Douglas' plants: Pinus lasiocarpa Hook. (Fl. Bor.-Amer. 2: 163. 1839) now Abies lasiocarpa (Hook.) Nutt., and Juniperus occidentalis Hook. (p. 166), previously named as J. excelsa Pursh, not Bieb. Thuja menziesii Dougl. (p. 165) was published in synonymy under T. gigantea Nutt., now T. plicata Donn. However, in his journal Douglas used T. plicata. The manuscript name Pinus distorta Dougl. (p. 161) was cited by Hooker as a synonym of P. inops, though P. contorta Dougl., the name now in use, had been published by Loudon the year before. Hooker placed P. monticola Dougl. as a synonym of P. strobus L.

Douglas' specimen of the species afterwards segregated as Taxus brevifolia Nutt. (No. Amer. Sylva 3: 86, pl. 108. 1849) was combined by Hooker with T. baccata L., of the Old World.

The 12 species of conifers to which Douglas gave manuscript names are summarized here under the names now accepted, with his names, where different, added in synonymy. Douglas still is cited as author of 7 of the specific epithets now in use. Only 3 names lack priority, 1 was given the same name by the publishing author, and 1 is invalid under present rules as a later homonym.

Abies amabilis (Dougl.) Forbes — PACIFIC SILVER FIR
Pinus amabilis Dougl., nomen nudum
Picea amabilis Dougl. ex Loud.

Abies grandis (Dougl.) Lindl. — GRAND FIR
Pinus grandis Dougl. ex D. Don in Lamb.

Abies procera Rehd. — NOBLE FIR
Pinus nobilis Dougl. ex D. Don in Lamb.
Abies nobilis (Dougl.) Lindl., non A. Dietr.

Abies venusta (Dougl.) K. Koch — BRISTLECONE FIR
Pinus venusta Dougl. (Dec. 1, 1836)
Pinus bracteata D. Don (1836)

Picea sitchensis (Bong.) Carr. — SITKA SPRUCE
Pinus menziesii Dougl. ex D. Don in Lamb. (1832)
Pinus sitchensis Bong. (Aug. 1832)

Pinus contorta Dougl. ex Loud. — SHORE PINE
Pinus distorta Dougl. ex Hook., pro syn.

Pinus lambertiana Dougl. — SUGAR PINE

Pinus monticola Dougl. ex D. Don in Lamb. — WESTERN WHITE PINE

Pinus ponderosa Laws. — PONDEROSA PINE
Pinus ponderosa Dougl. ex Loud., nomen nudum

Pinus radiata D. Don — MONTEREY PINE
Pinus insignis Dougl. ex Loud.

Pinus sabiniana Dougl. — DIGGER PINE

Thuja plicata Donn ex D. Don in Lamb. — WESTERN REDCEDAR
Thuja menziesii Dougl., pro syn.

The 5 species of Douglas' conifers which he did not name but which were named by others are:

Abies lasiocarpa (Hook.) Nutt. — ALPINE FIR
Pinus lasiocarpa Hook.

Juniperus occidentalis Hook. — SIERRA JUNIPER

Pinus coulteri D. Don — COULTER PINE
Pinus sabiniana Dougl. var., Dougl.
Pinus macrocarpa Lindl.

Taxus brevifolia Nutt. — PACIFIC YEW
Taxus baccata Hook. partim, non L.

Pseudotsuga taxifolia (Poir.) Britton — DOUGLAS-FIR
Pinus douglasii Sabine ex D. Don in Lamb.
Pseudotsuga douglasii (Sabine) Carr.

Even today many Europeans retain the name Pseudotsuga douglasii for the Douglas-fir with some justification, as the nomenclature is involved and allows more than one interpretation.

Of the 17 species of conifers listed above, Douglas is credited with the introduction to horticulture of 11 (1, p. 334; 2, p. 254-260): Abies amabilis, A. grandis, A. procera, Picea sitchensis, Pinus coulteri, P. lambertiana, P. monticola, P. ponderosa, P. radiata, P. sabiniana, and Pseudotsuga taxifolia. His specimens of the 6 remaining species, introduced afterwards, probably did not contain viable seeds. Of course, he collected specimens of other conifers which were not new. Among these was the redwood, Sequoia sempervirens (D. Don) Endl. (3, p. 150; Howell, John Thomas. Leaflets West. Bot. 2: 96. 1938), which was discovered earlier and introduced later.

It is unfortunate that Douglas did not properly publish descriptions of all the new conifers he named and introduced and that publication of these new species was spread among the works of several authors. His manuscript names were retained by the authors who supplied descriptions. The association of his name with the English name Douglas-fir honors his memory far more effectively than scientific names could.

Forest Service,
United States Department of Agriculture,
Washington, D. C.

LITERATURE CITED

1. Douglas, David. Journal kept by David Douglas during his travels in North America 1823-1827. 364 p., illus. London, 1914.

2. Harvey, Althelstan George. Douglas of the fir, a biography of David Douglas, botanist. 290 p., illus. Cambridge, Mass., 1947.

3. H[ooker], W. J. A brief memoir of the life of Mr. David Douglas, with extracts from his letters. Comp. Bot. Mag. 2: 79-182, illus. 1836.

4. Suringar, J. Valckenier. Plantenverzamelaars. I. David Douglas de plantenverzamelaar in het verre westen ten tijde der Indianen- en buffelheerschappij. Nederland. Dendrol. Ver. Jaarb. 2 (1926): 69-97, illus. 1926 [1927].

- - - - - - - - - - - - - - - - - - - - - -

## THE KNOWN GEOGRAPHIC DISTRIBUTION OF THE MEMBERS OF THE ERIOCAULACEAE. SUPPLEMENT 3

Harold N. Moldenke

Since the publication of the previous Supplement to this list several thousand additional specimens of this group have been examined and annotated from the herbaria of the University of Colorado at Boulder, the Facultad Nacional de Agronomia at Medellin, Colombia, the University of Massachusetts at Amherst, the Chicago Natural History Museum, the California Academy of Sciences at San Francisco, the Instituto Miguel Lillo at Tucumán, Argentina, Oregon State College at Corvallis, the State College of Washington at Pullman, Rancho Santa Ana Botanic Garden at Anaheim, California, the University of Washington at Seattle, the Instituto Darwinion at San Isidro, Argentina, the Southern Methodist University at Dallas, Texas, Oklahoma Agricultural and Mechanical College at Stillwater, the United States National Herbarium at Washington, and the Britton Herbarium at the New York Botanical Garden. These specimens have brought to light 47 new country or island records, 48 new state, province, or department records, and 30 new county or parish records. Also, 151 new binomials or trinomials, or corrections of previous entries, must be added to the alphabetic list of scientific names proposed in this group.